

— KARINA, A. —
R. I. ZVANKHA

RELATION OF IONOSPHERIC AND MAGNETIC DISTURBANCES
IN HIGH LATITUDES FROM DATA OBTAINED IN
MURMANSK.

Report presented at the COMET meeting, 1-9 August 1978, Moscow.

89769

S/169/61/000/002/023/039
A005/A001

3.9100

9.9842 (also 1046, 1046)

Translation from: Referativnyy zhurnal, Geofizika, 1961, No. 2, p. 39, # 20283

AUTHOR: Zevakina, R. A.

TITLE: The Connection Between Ionospheric and Magnetic Disturbances at High Latitudes

PERIODICAL: V sb.: "Magnitno-ionosfernyye vozmushcheniya", No. I, Moscow, AN SSSR, 1959, pp. 45-52

TEXT: Anomalous variations in the ionosphere during magnetic storms and bay-like geomagnetic disturbances are considered from data obtained at Murmansk in 1954-1957. As criteria of the disturbances in the ionosphere, the appearance of the total (B) or increased ($f_{min} \geq 3$ Mc) absorption, the increase of the limit frequencies of the E_s-layer ($fE_s \geq 4$ Mc), and the deviation of f_oF2 from the median values by more than 20% were adopted. It turned out that the anomalous increase of fE_s is observed considerably more frequently than the anomalous variation of f_oF2 during both the magnetic storms and negative and positive bays. The author concludes that the processes developing in the lower ionosphere at an

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The Connection Between Ionospheric and Magnetic Disturbances at High Latitudes
altitude of about 100 km are responsible for the magnetic disturbance at high
latitudes. There are 7 references.

L. L.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

SOV/49-59-2-17/25

AUTHOR: Zevakina, R. A.

TITLE: The Effect of Bay Disturbances of a Magnetic Field on the Ionospheric Variations as Observed in Murmansk (Bukhtobraznyye vozmushcheniya geomagnitnogo polya i svyazannyye s nimi izmeneniya v ionosfere po nablyudeniya v Murmanske)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 2, pp 304-310 (USSR)

ABSTRACT: It was observed that the bays of the magnetic field have regular diurnal variations. During 1954-56 in Murmansk the positive bays, which are more frequent in winter, occurred mainly in the second half of the day while the negative ones, which are more frequent in summer, were mostly observed in the first half of the day (Tables 1, 2 and 3). The currents causing the bay disturbances, change their direction from W-E (Fig 1, curve 1 - positive bays) to E-W (Fig 1, curve 2 - negative bays) at about 8 pm local time. Fig 2 shows the number of hours of the bays for the E-W (a) and W-E (b) currents. The centre of the currents was established in some cases (86%) in the North, but it moved southward when the solar activity increased. The majority of bay disturbances were accompanied by the abnormal variations of the ionosphere. Thus in more than 50% of the cases, the frequency in the

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The Effect of Bay Disturbances of a Magnetic Field on the Ionospheric Variations as Observed in Murmansk

layer ES increased to above 3 μ h, while in 25% of the cases, a complete fade out of the radio wave took place. With an increase of the magnetic activity the character of the ionospheric variations affected by the bay disturbances, changed, i.e. the number of occurrences of the ES and the full fade-out decreased together with an increase of the anomalies in the region F_2 (Table 4). Fig 4 shows the frequency of the occurrences of $fES > 3 \mu h$ (top), $B\%$ (middle) and $|\Delta f^o F_2| > 20\%$ (bottom), 2 hours before and after the formation of a bay (a - positive bays, b - negative bays, 1 - 1954, 2 - 1955, 3 - 1956). The presence of the sporadic ES cloud at the time of a full fade-out when the bay disturbances occurred, gave evidence of the corpuscular current. During that time the centre of the disturbances was situated north of Murmansk. An example of a negative bay, developed

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SOV/49-59-2-17/25

The Effect of Bay Disturbances of a Magnetic Field on the Ionospheric Variations as Observed in Murmansk

on May 14, 1956, in Murmansk, is illustrated in Fig 3, where copies of the magnetograms and ionograms are shown. There are 4 figures, 4 tables and 13 references. 5 of the references are Soviet, 2 German, 1 French and 5 English.

ASSOCIATION: Murmanskoye otdeleniye nauchno-issledovatel'skogo instituta zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln (Murmansk branch of the Scientific Research Institute of the Earth's Magnetism, Ionosphere and Propagation of Radio Waves)

SUBMITTED: June 18, 1957.

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89768

3.9100

9.9842 (also 1041, 1046)

S/169/61/000/002/022/039

A005/A001

Translation from: Referativnyy zhurnal, Geofizika, 1961, No. 2, p. 39, # 20282

AUTHORS: Zevakina, R. A., Rapoport, Z. Ts.

TITLE: Certain Peculiarities of the Ionosphere Above Murmansk

PERIODICAL: "Tr. Sibirsk. fiz.-tekhn. in-ta pri Tomskom un-te", 1959, No. 37, pp. 369-376

TEXT: The data are analyzed of vertical sounding of the ionosphere and the record of the geomagnetic variations; the data were obtained at Murmansk in 1954-1955. The F2-region is characterized by the appearance of additional layers located above and below the main layer. The E_s-layer is very often observed; the frequency of its appearance in night hours comes up to 90%. Ionospheric disturbances were determined from the total absence of reflected signals in consequence of the anomalous absorption, from the increase of the absorption ($f_{min} \geq 3$ Mo), the increased values of fE_s ($fE_s \geq 4.0$ Mo), and the considerable deviation from the median values of the critical frequencies of the F2 layer ($|\Delta f_{oF2}| > 20\%$). The disturbance of the ionosphere made its appearance in the main by a considerable increase of fE_s (in night hours) and increase of absorption (in morning and

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Certain Peculiarities of the Ionosphere Above Murmansk

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A005/A001

day hours). The F2-region was seldom observed during disturbances in consequence of both the shielding by the E_s-layer and the increased absorption. In the majority of events, disturbances set in in the evening hours (19 - 23 o'clock) with an increase of fE_s. The duration of disturbances has a maximum at the equinoxes; in the same period anomalous absorption was more often observed. The high variability is characteristic for the disturbed state of the ionosphere above Murmansk; ionograms, taken successively by observations conducted every minute, often differ from each other. Severe and moderate ionospheric disturbances are always accompanied by geomagnetic ones, whereat high values of fE_s were observed as a rule during the active periods of geomagnetic disturbances. The inhomogeneity of the ionosphere above Murmansk is related to the penetration of the Sun's corpuscular emission.

Z. R.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

ZEVAKINA, R. A. ~~PUSHKOV, R. V.~~

"Geographical Distribution of Ionospheric Disturbances in High Latitudes."

report submitted for the Intl. Conf. on Cosmic Rays and Earth Storm (IUPAP)
Kyoto, Japan 4-15 Sept 1961.

S/169/62/000/007/138/149
D228/D307

AUTHOR: Zevakina, R. A.

TITLE: Geographic distribution of polar absorption

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 7, 1962, 24, abstract 7G150 (V sb. Ionosfern. issledovaniya, no. 6, M., AN SSSR, 1961, 35-45)

TEXT: Synoptic charts of Δf_{\min} and the probability of the appearance of anomalous absorption were plotted on the grounds of the data of the northern hemisphere's world ionosphere-station network for July, September, and December 1957. The maps for quiet and disturbed periods are considered separately. There is no additional polar absorption in quiet periods. A region of anomalous absorption appears when the conditions in high latitudes are disturbed, its size and shape varying in accordance with the disturbance's nature and intensity. The probability of the appearance of anomalous absorption is much higher in the eastern hemisphere than in

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Geographic distribution of ...

S/169/62/000/007/138/149
D228/D307

the western. The region where the probability of the appearance of anomalous absorption is maximal is shaped like a spiral, unfolding clockwise in the area of maximum auroral frequency and starting near the magnetic pole. The zone's dimensions and the probability for the appearance of anomalous absorption in it depend strongly on the monthly activity. 10 references. [Abstracter's note: Complete translation.]

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31662
S/570/61/000/019/002/008
B139/B104

AUTHOR: Zevakina, R. A.

TITLE: Disturbances of the ionosphere in high latitudes and possibilities of their prediction

SOURCE: Akademiya nauk SSSR. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln. Trudy, no. 19 (29), 1961, 18 - 30

TEXT: This paper gives preliminary research results on disturbances of the ionosphere in high latitudes and their spatial distribution according to data obtained in the Geophysical Year. In years of low solar activity, foF2 in high latitudes is below 1 - 1.5 Mc/sec during the morning and evening hours of winter months with quiet ionosphere. Broadcasting on one frequency over 24 hr is possible during the polar day, during the polar night, maximum foF2 is after midday. Considerable absorption of waves frequently occurs during disturbances, and the E layer has higher cutoff frequencies. To take the fluctuations of f_{\min} into account, the degree of absorption is expressed by the equation $\Delta f_{\min} = f_{\min} - (f_{\min})_{\text{median}}$.

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Disturbances of the ionosphere in high ...

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S/570/61/000/019/002/008
B139/B104

Increased absorption is assumed when Δf_{\min} exceeds 40%. $fEs \geq 4$ Mc/sec corresponds to a disturbed ionosphere. The most important characteristics of a disturbed ionosphere in high latitudes are total or increased absorption, increase in the cutoff frequency fEs over 4 Mc/sec, 20% variation of $foF2$, and occurrence of E2s. According to observations by the Murmanskaya Stantsiya (Murmansk Station), total absorption usually occurs in the morning hours, increased absorption at noon, and $fEs \geq 4$ Mc/sec toward midnight. The daily variation of positive and negative $\Delta foF2 > 20\%$ during 24 hours is not so distinct, most frequently they occur in the evening hours. North of the zone of polar lights, the frequency of Es has two maxima; in the zone of polar lights it has one maximum at midnight. The duration of "undisturbed periods" is shorter in high than in low latitudes. Disturbances usually set in between 16 and 24 hr. Throughout the year, total absorption usually occurs during equinoxes, increased absorption occurs again in summer; by night, Es usually occurs in winter, by daylight in summer, and most $foF2$ anomalies occur in winter. Also in high latitudes, disturbances of the ionosphere tend to recur in a 27-day cycle. In the Geophysical Year, disturbance charts with geomagnetic coordinates

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S/570/61/000/019/002/008

B139/B104

Disturbances of the ionosphere in high ...

were set up, and the data obtained for July, September, and December 1957 were analyzed in a widespread network of research stations. According to the charts of total absorption for 0, 6, 12 and 18 hr world time for September 1957 (where most disturbances were recorded), the zone of total absorption reaches from the pole to $\lambda = 50^\circ$ north latitude on the eastern hemisphere, and 60° north latitude on the western hemisphere. On the eastern hemisphere, total absorption occurs much more frequently, and is strongest at 6 and 18 hr world time on the morning side of the earth, in the zone of polar lights. On all charts, the region of the highest frequency of total absorption is asymmetrical with respect to the poles. Besides, increased fading in high altitudes occurs when Δf_{\min} reaches

100 - 200%, and when its region is asymmetrically distributed over the two hemispheres and larger in the eastern hemisphere. Disturbances of $fEs > 4$ Mc/sec in the analyzed period occurred more frequently in the western hemisphere, mostly in Canada. It is difficult to predict disturbances for high latitudes, since the extent of absorption and cutoff frequencies of the Es layer have also to be forecast besides foF2. Forecasts are suitably given in the form of synoptic charts for $\Delta foF2$,

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Disturbances of the ionosphere in high ...

31662

S/570/61/000/019/002/008

B139/B104

f_{min} , and fEs . There are 8 figures and 18 references: 11 Soviet and 7 non-Soviet. The four most recent references to English-language publications read as follows: Störmer, The Polar Aurora, 1955; Obayashi, T., J. Radio Res. Laborat., 6, 26, 410, 1959; Sato, T., Rep. Ionosph. Space Res. in Japan, 13, 2, 91, 1959; V. Agy. J. Geophys. Res. 59, No. 4, 1954.

ASSOCIATION: IZMIRAN

Card 4/4

45213

S/203/63/003/001/010/022
A061/A126

99130
AUTHOR: Zevakina, R. A.

TITLE: The space-time distribution of an ionospheric disturbance in high latitudes of the northern and the southern hemisphere after large chromospheric flares

PERIODICAL: Geomagnetizm i aeronomiya, v. 3, no. 1, 1963, 79 - 87

TEXT: A study was made of absorption and changes in the E_s and F₂ regions during two large ionospheric disturbances associated with chromospheric flares and with type IV radio bursts. For this purpose, the synoptic charts Δf_{min} , fE_s , and Δf_{F_2} of the northern and the southern hemisphere were examined for the two disturbances of November 12 - 15, and November 20 - 26, 1957. During the former disturbance the absorption increased in the polar cap region and in the region of aurora polaris until the commencement of the magnetic storm, without noticeable changes being established in the E_s and F₂ regions. During the latter disturbance, absorption was found to increase considerably in the polar cap region and

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The space-time distribution of an

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AQ61/A126

and in that of aurora polaris. At the same time, the f_oF_2 layer dropped sharply. It is stated for the former case that high-energy protons, which cause the anomalous absorption, propagate at high speeds independently of the flux velocity. In the latter case, the high-energy protons are trapped by the magnetic field of the corpuscular stream and thus reach the Earth's atmosphere together with the principal plasma stream. The anomalous changes of absorption and the dropping of the f_oF_2 layer as well as the rising of the fE_s layer take place simultaneously in the southern and the northern hemisphere. The layer dislocations are more stable on the northern than on the southern hemisphere. There are 6 figures and 1 table.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i resprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation AS USSR)

SUBMITTED: June 18, 1962

Card 2/2

ACCESSION NR: AP4013142

S/0203/64/004/001/0083/0089

AUTHOR: Zevakina, R. A.

TITLE: Seasonal change in the three dimensional distribution of ionospheric disturbances in high latitudes of the northern and southern hemispheres

SOURCE: Geomagnetizm i aeronomiya, v. 4, no. 1, 1964, 83-89

TOPIC TAGS: ionosphere, F2 zone, anomalous light absorption, magnetohydrodynamic wave, short wave solar radiation, polar cap, polar aurora, corpuscular stream, magnetosphere

ABSTRACT: The author has studied the change (with time of year) of synoptic maps showing anomalous absorption, E_s with high limiting frequencies (greater than 4 megacycles), and positive and negative deviations (exceeding 20%) from the median. These studies were made for both northern and southern hemispheres. It is pointed out that anomalous changes in f_oF2 are rarely observed in the northern hemisphere. When they do occur, they occupy a much smaller space than in the southern hemisphere. Anomalous absorption, observed simultaneously in both hemispheres, appears earlier

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ACCESSION NR: AP4013142

in the northern hemisphere and is much more widespread there than in the southern hemisphere. The regions of E_s with high limiting frequencies are more stable and occupy greater space in the northern hemisphere, regardless of the season of the year. During disturbances of low activity, an increase in ionization is observed throughout the disturbance. During very large disturbances, an increase in ionization in the F2 zone is frequently observed at the beginning of the disturbance, before the ionosphere warms up. After the warming occurs, ionization declines sharply. The great stability of the F2 region in high latitudes of the northern hemisphere is explained by these relations. Energy from dissipation of magnetohydrodynamic waves in the northern hemisphere is apparently small in comparison to the energy of short-wave solar radiation and does not substantially change the ionospheric state. Another possible cause of very high ionization in the F2 zone in the high-latitude ionosphere may be the injection of protons--from interaction of the corpuscular stream with the earth's magnetosphere--in the upper ionosphere of polar caps and zones of polar auroras. Orig. art. has: 2 figures and 2 tables.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln
AN SSSR (Institute of Terrestrial Magnetism, the Ionosphere, and Propagation of
Radio Waves AN SSSR)
Card 2/3

ACCESSION NR: AP4013142

SUBMITTED: 09Sep63

SUB CODE: OP, ES

DATE ACQ: 02Mar64

NO REF SOV: 007

ENCL: 00

OTHER: 000

Card 3/3

L 38375-66 EWT(1)/FCC CH

ACC NR: AT6023730

SOURCE CODE: UR/2831/65/000/014/0086/0093

AUTHOR: Mogilevskiy, E. I.; Zevakina, R. A.; Lavrova, Ye. V.; Lyakhov, L. N. 63
64/

ORG: none

TITLE: The nature of time-space distribution of ionospheric disturbances ✓

SOURCE: AN SSSR. Mezhdunarodnyy geofizicheskiy komitet. V razdel, programmy
MGG: Ionosfera. Sbornik statey, no. 14, 1965. Ionosfernyye issledovaniya, 86-93

TOPIC TAGS: ionospheric disturbance, solar wind, F layer, geomagnetic field, solar plasma, critical frequency, solar corpuscular radiation, atmospheric ionization, atmospheric disturbance, ionospheric absorption, synoptic meteorology, map
ABSTRACT: Ionospheric perturbations are associated with solar corpuscular streams and the magnetosphere. ✓ An increased disturbance in the F2 layer at high latitudes is connected with additional ionization and structural disruptions of the lower ionosphere. Data obtained from 60 ionospheric stations during the IGY ✓ were used in analysis of the spatial distribution of anomalous absorption in the Northern and Southern Hemispheres. Absorption maps have been drawn and compared with solar processes, ionospheric disturbances, and perturbations in the geomagnetic field. Anomalous absorption begins several hours after a type-IV radio burst and covers the polar cap and the auroral zone. During weak absorption, preminent "shock zones" and quasi-spiral regions are formed allowing direct entry of high-energy solar corpuscles. A corpuscular stream model with a forceless magnetic field was used for ionospheric disturbances. A forceless magnetic field is a necessary
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L 38375-66

ACC NR: AT6023730

condition for macroscopic motion if the solar plasma in the chromosphere and corona is compressible. Using this model, the appearance of solar low-energy cosmic rays is possible with the plasma cloud in which the burst and magnetic field were generated retaining injected protons. The geomagnetic disturbance is a consequence of the interaction of the magnetic field of the corpuscular stream with the magnetosphere. This approach to the problem does not require a solar plasma with a frozen magnetic field. Analysis of synoptic maps of the deviation distribution of critical frequencies in the F2 layer from the median value demonstrated the existence of regions with increased and decreased frequencies. Maximum negative deviations occurred in the geomagnetic latitudinal belt of 40—75° and coincided with the beginning of magnetic storms. Negative deviations were located in regions of magnetic anomalies. Positive deviations of critical frequency occur during weak geomagnetic disturbances and depend on the season. They appear in regions of magnetic anomalies. Variations of critical frequency in the F2 layer increase with the geomagnetic latitude, and they attain maximum value in the auroral zone. Orig. art. has: 4 figures.

[EG]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 010/ OTH REF: 001/ ATD PRESS: 5042

Card 2/2 MLP

ZEVAKINA, R.A.

Seasonal variation of the space distribution of ionospheric disturbances at high latitudes of the northern and southern hemispheres. Geomag. i aer. 4 no.1:83-89 Ja-F '64.

(MIRA 17:2)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR.

MOGILEVSKIY, Ye. I.; ZEVAKINA, R. A.; LAVROVA, Ye. V.; KYAKHOVA, L. N.

"On the Nature and Space - and Time - Distribution of Ionospheric Disturbances."

summary to be presented at the 13th Gen Assembly, IUGG, Berkeley, Calif, 19-31 Aug 63.

ZEVAKINA, R.A.

World Days Service during the IQSY. Geofiz. biul. no.15:
20-24 '65. (MIRA 18:11)

ZEVAKINA, V.

6823. Zevakina, V. Opyt svinarki V. I. Popovoy po vyrashchivaniyu porosyat (Kolhoz "Pobeda" Georgiyev. Rayona Yuzh.-Kazakhst. obl.) Alma-Ata, 1954. 12 s. 20 sm. (N-vo sel'skogo khozyaystva kazakh. SSR. Glav. upr. s.-kh. propagandy). 5.000 ekz. Bespl. -- (55-2264) P 636. 4. 083.37 st. (584.68)

SO: Knizhnaya Letopis' No. 6, 1955

ZEVAKINA, V. P.

Frunze District (South Kazakhstan Province) - Horse Breeding

Work results of the commercial horse-breeding farm of the Gorkiy Collective Farm.
Frunze District, South Kazakhstan Province. Konevodstvo 22 no. 8, 1952

Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.

AUTHORS: SOV/19-58-6-446/685
Magaril, R.Z., Zablotskiy, A.G., and Zevako, V.K.

TITLE: An Instrument for the Continuous Automatic Measurement of the Humidity of Petroleum (Mazout). (Pribor dlya nepreryvnogo avtomaticheskogo izmereniya vlazhnosti nefi (mazuta).

PERIODICAL: Byulleten' izobreteniy, 1958, Nr 6, pp 98/99 (USSR)

ABSTRACT: Class 42 1, 3⁰⁹. Nr 113389 (584282 of 14 Sep 1957). Submitted to the Committee for Inventions and Discoveries at the Ministers Council of USSR. An instrument for the continuous automatic measurement of the humidity of petroleum (mazout) in a stream by determining the dielectric permeability thereof; with a pick-up in the form of a cylindrical condenser, and an electric current of constant 5,000-10,000 cycles frequency applied to the outer hollow and the inner all-metal cylinder thereof, the petroleum product inside representing the dielectric; including a microammeter graduated in percentages of the water content of the petroleum.

Card 1/1

ZEVAL'D, L. O.

Zeval'd, L. O. "Effect of B₁ avitaminosis on the conditioned reflex action of dogs,"
Collection I, Trudy fiziol. laboratorii im. Pavlova, Vol. XIV, 1948, p. 159-65

SO: U-3264, 10 April 1953, (Letopis 'Zhurnal 'nykh Statey, No. 3, 1949)

ZEVAL'D, I.O.

[Effect of the excision of parathyroids on the conditioned reflexes of dogs] K voprosu o vliianii ekstirpatsii okoloschchitovidnykh zhelez na uslovno-reflektornuiu deiatel'nost' sobak. Tr.Fiziol.laborat., Pavlova 16:239-246 '49.
(GIML 19:1)

1. Of the Institute of Evolutionary Physiology and Pathology of Higher Nervous Activity imeni Academician I.P.Pavlov of the Academy of Medical Sciences USSR (Director -- Academician L.A.Orbeli).

ZEVAL'D, L.O.

[Experiments on intensification of diminution of tetanic convulsions by means of vitamin B₁ injections] Opyt kupirovaniia pripadkov tetanicheskikh sudorog ili oslablenie ikh in'ektsiyami vitamina B₁. Tr. Fiziol.laborat.Pavlova 16:247-252 '49. (GML 19:1)

1. Of the Institute of Evolutionary Physiology and Pathology of Higher Nervous Activity imeni Academician I.P.Pavlov of the Academy of Medical Sciences USSR (Director -- Academician L.A.Orbeli).

ZEVAL'D, L.O.

[Effect of vitamin B₁ deficiency on the conditioned-reflex activity of dogs] Vliianie avitaminoza B₁ na uslovno-reflektornuiu deiatel'nost' sobak. Tr.Fiziol.laborat. Pavlova 16:253-258 '49. (GML 19:1)

1. Of the Institute of Evolutionary Physiology and Pathology of Higher Nervous Activity imeni Academician I.P.Pavlov of the Academy of Medical Sciences USSR (Director -- Academician L.A.Orbeli).

ZEVAL'D, L.O.

[Observations on new conditioned reflexes in dogs with vitamin B₁ deficiency] Vyrabotka novykh uslovnykh reflektsov u sobak, nakho-
diashchikhsia v sostoianii B₁ -avitaminosa. Tr.Fiziol.laborat. Pav-
lova 16:259-262 '49. (CML 19:1)

1. Of the Institute of Evolutionary Physiology and Pathology of Higher
Nervous Activity imeni Academician I.P.Pavlov of the Academy of Medi-
cal Sciences USSR (Director -- Academician L.A.Orbeli).

CA

11E

Effect of vitamin B₁ on conditioned reflex activity of dogs.
L. O. Zaval'd. Zhur, *Vyshei Nervoi Degrad. im. I.P. Pavlov* 4, 190-4 (1951).—While low level injections of vitamin B₁ have no effect on the magnitude of conditioned reflexes, a high dosage (10 mg. daily or more) leads to decreased magnitude of the reflexes, loss of stability of the reflex activities, and apparently changes in functional state of the cerebral cortex. Stimuli used were light and noise. The threshold level varies with the individual dogs.
O. M. Kosolapov

NIH Translation - /M

Zeval'd, L.O.

USER/Medicine - Neurology

Card 1/1 Pub. 22 - 45/47

Authors : Zeval'd, L. O.

Title : Dynamics of the development of critical inhibition and its effect on the higher nervous activity

Periodical : Dok. AN SSSR 98/5, 869-872, Oct 11, 1954

Abstract : The changes occurring in the higher nervous activity of dogs, as result of the development of critical inhibition during the application of strong stimuli, were investigated. The results obtained are described in detail. Tables.

Institution : Academy of Sciences USSR, The I. P. Pavlov Institute of Physiology

Presented by : Academician K. M. Bykov, June 21, 1954

ZEVAL'D, L.O.

Dynamics of the limits of differential inhibition in various functional states. Zhur. vys. nerv. deiat. 14 no.2:263-269

Mr-Apr '64.

(MIRA 17:6)

1. Laboratory of Physiology and Pathology of Higher Nervous Activity, Pavlov Institute of Physiology, U.S.S.R. Academy of Sciences, Leningrad.

ZEVAL'D, L.O.

Influence of novocaine on the higher nervous activity in dogs.
Zhur. vys. nerv.deiat. 11 no.5:860-867 3-0 '61. (MIRA 15:1)

1. Laboratory of Physiology of the Higher Nervous Activity, Pavlov
Institute of Physiology, U.S.S.R. Academy of Sciences, Leningrad.
(NOVOCAINE) (CONDITIONED RESPONSE)

AUTHOR: Zeval'd, L. O.

20-117-5-54/54

TITLE: On the Influence of Vitamin B₁ Upon the Conditioned Reflex Activity in Dogs (K voprosu o vliyanii vitamina B₁ na uslovno-reflektor-nuyu deyatel'nost' sobak).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 5, pp. 917-920 (USSR).

ABSTRACT: In a former paper (reference 1) the author found the ineffectiveness of the subcutaneous introduction of 2 and 5 mg vitamin B₁ 11 - 13 days long with respect to the conditioned-reflectory activity in dogs. In contrast to this, doses of 10 and 20 mg 20 days long led to the alteration of the functional state of the great hemispheres. This was expressed in the weakening of the conditioned-reflectory reactions, their instability, in the disturbance of the proportion of forces ("silovyya otnosheniya"), etc. Feeding of 50 and 100 mg vitamin B₁ 10 days long was ineffective. In present paper the influence of strong vitamin B₁ doses should be observed, especially on the "super limit inhibition" ("zapredel'noye tormozheniye") which was effected by superstrong ("sverkhsil'nyy") conditioned stimulus. The conditioned reflexes were worked out on following stimuli: ringing, light, sound,

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ZEVAL'D, L.O.

V-10

USSR/Human and Animal Physiology - The Nervous System.

Abs Jour : Ref Zhur - Biol., No 2, 1958, 9059

Author : L.O. Zeval'd

Inst : The Institute of Physiology of the Academy of Sciences of the USSR.

Title : The Dynamics of Limiting Inhibition.

Orig Pub : Tr. In-ta fiziol. AN SSSR, 1956, 5, 5-13

Abstract : In three dogs (supposedly of a strong type), upon initial application in a system of conditioned feeding reflexes of a 3500 cycle, 82 decibel tone and a gradual increase in its loudness (by 1-4 decibels every 5-6 days) up to 113.2 decibels, the volume of the conditioned secretion was less than for the rest of the weaker conditioned stimuli; the intensity of the rest of the conditioned reflexes either did not change or changed only slightly.

Card 1/2

ZEVAL'D. L.O.

Development of transmarginal inhibition with a continuous increase
in cortical excitation induced by methyl phenethylamine. Trudy Inst.
fiziol. 6:254-259 '57. (MIRA 11:4)

1. Laboratoriya fiziologii i patologii vysshey nervnoy deyatel'nosti
(zaveduyushchiy F.P. Mayorov).

(PHENETHYLAMINE) (NERVOUS SYSTEM)

ZEVAKIN, L.V.

Safety devices for automatic looms. Tekst.prom. 19. no.8:32-36
Ag '59. (MIRA 13:1)
(Looms--Safety appliances)

ZEVAL'D, L.O.

Effect of vitamin B₁ on the conditioned reflex activity in dogs.
Dokl. AN SSSR 117 no.5:917-920 D '57. (MIRA 11:3)

1. Institut fiziologii im. I.P.Pavlova Akademii nauk SSSR.
Predstavleno akademikom K.M.Bykovym.
(CONDITIONED RESPONSE)

ZEVAL'D, L.O.

On the problem of the dynamics of transmarginal inhibition. Trudy
Inst.fiziol. 5:5-13 '56. (MLRA 10:1)

1. Laboratoriya fiziologii i patologii vysshey nervnoy deyatel'nosti.
Zaveduyushchiy - F.P.Mayorov.
(INHIBITION)

ZEVAL'D, L.O.

Effect of vitamin B₁ on conditioned reflex function in dogs. Zh.
vysshei nerv. deiat., Pavlova 1 no. 2:160-164 Mar-Apr 1951.

(CJML 22:5)

1. Institute of Physiology imeni Academician I. P. Pavlov of the
Academy of Sciences USSR.

ZEVALD, L.O.

Effect of prolonged administration of large doses of vitamin D
on conditioned reflexes activity. *Fiziol. zhur.* 44 no.10:984-990
O '58 (MIRA 12:1)

1. From the laboratory of physiology and pathology of higher nervous
activity, I.P. Pavlov Institute of Physiology, Leningrad.

(REFLEX, CONDITIONED, eff. of drugs on,
vitamin D (Rus))

(VITAMIN D, eff.
on conditioned reflex activity (Rus))

ZEVAL'D, R. G., Cand of Bio Sci -- (diss) "On the Problem of the
Localization of the Process for Slowing Down Activity and on the
Functional Interrelation Between the Motor and Skin Analyzers in
the Cortex of Large Dogs," Leningrad, 1959, 17 pp (Leningrad
State Pediatrics Institute im A. I. Gertsen) (KL, 2-60, 11)

ZEVAL'D, R.G.

On mechanisms of erroneous reactions appearing as a result of
dynamic stereotype disorder. Zh. vyssh. nerv. deiat. Pavlov
13 no.3:465-473 '63.

(MIRA 17:9)

1. Laboratoriya sravnitel'nogo ontogeneza vysshey nervnoy
deyatelnosti Instituta fiziologii im. I.P. Pavlova Akademii
nauk SSSR.

(REFLEX, CONDITIONED) (CEREBRAL CORTEX)

ZEVAL'D, R.G.

Effect of the cathodic electrotonus on the central nervous system
of warm-blooded animals. Trudy Len. ob-va est. 74 no. 1:84-87
'63. (MIRA 17:9)

ZEVARINA, N. V.

"Research on Wind Change in Free Atmosphere," Trudy NIU GUGMS, Series 1,
No 21, Aeroklimatologiya, 1946, pages 20-24.

USSR/Human and Animal Physiology. Blood

T-4

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 65131

Author : Zeveke A.V.

Inst : Gorkiy Station of Blood Transfusion and Faculty Surgical
Clinic of Gorkiy Medical Institute

Title : An Instrument for Determining Blood Clotting Dynamics
Photometrically.

Orig Pub : Dyul. nauch. rabot. Gor'kovsk. st. perelivaniya krovi i fak.
khirurg. klinika Gor'kovsk., ed. in-ta, Gor'kiy, 1957, 55-57

Abstract : No abstract

Card : 1/1

ZEVEKE, A.V.

New appliance for artificial respiration. Biul. eksp.biol. i med.
38 no.8:72-74 Ag '54. (MLRA 7:9)

1. Iz kafedry fiziologii cheloveka i zhivotnykh Gor'kovskogo gosudar-
stvennogo universiteta.
(RESPIRATORS.)

ZEVEKE, A.V.

Simultaneous photorecording of some indices. Fiziol.zhur. 50
no.4:517-519 Ap '64. (MIRA 18:4)

1. Kafedra fiziologii cheloveka i zivotnykh Gosudarstvennogo
universiteta imeni Lobachevskogo, Gor'kiy.

ZEVEKE, A.V.

Signals from pulmonary receptors transmitted on nonmyelinated
fibers of the vagus nerve. Trudy Inst.norm.i pat.fiziol. AMN
SSSR 7:45-46 '64. (MIRA 18:6)

1. Kafedra fiziologii Gor'kovskogo universiteta imeni Lobachevskogo
(zav. - dotsent Artemov) i laboratoriya biofiziki serdechno-sosu-
distoy sistemy (zav. - doktor med.nauk V.M.Khayutin) Instituta
normal'noy i patologicheskoy fiziologii AMN SSSR.

ZEVEKE, A.V.

Studying pulmonary mechanoreceptors by antidromic depression of
afferent signals. Dokl.AN SSSR 138 no.3:725-728 My '61.
(MIRA 14:5)

1. Gor'kovskiy gosudarstvennyy universitet im. N.I.Lobachevskogo.
Predstavleno akademikom V.N.Chernigovskim.
(LUNGS---INNERVATION)

ANDREYEV, Georgiy Pavlovich; ANDREYEV, Sergey Nikolayevich;
BOGOLYUBOV, Valentin Yevgen'yevich; BURDAK, Nadezhda
Mironovna; ZHUKHOVITSKIY, Boris Yakovlevich; ZEVEKE,
Georgiy Vasil'yevich; KARAYEV, Ruben Iosifovich; LEVITAN
Semen Arkad'yevich; MUKHIN, Aleksandr Andreyevich;-
NEGNEVITSKIY, Iosif Borisovich; PEREKALIN, Mikhail
Aleksandrovich; POLIVANOV, Konstantin Mikhaylovich, prof.,
doktor tekhn.nauk; FRIDKIN, L.M., tekhn. red.

[Problems of theoretical principles of electrical engineering;
theory of networks]Zadachnik po teoreticheskim osnovam elektro-
tekhnika; teoriia tsepei. [By]G.P.Andreev i dr. Moskva, Gos-
energoizdat, 1962. 159 p. (MIRA 15:12)
(Electric engineering) (Electric networks)

8(2)

SOV/105-59-1c-25/25

AUTHOR: Zeveke, G. V., Candidate of Technical Sciences

TITLE: V. P. Sigorskiy. Methods of Analyzing Electric Circuit Diagrams With Multipolar Elements. 402 Pages, Price: 13.50 Rubles, Publishing House of the Academy of Sciences of the Ukrainskaya SSR, Kiyev, 1958

PERIODICAL: Elektrichestvo, 1959, Nr 10, pp 94 - 95 (USSR)

ABSTRACT: This is a book review. The book deals with linear electric circuit diagrams with constant parameters. The book is divided into three parts: 1) Theory of multipole circuit diagrams; 2) application of the general theory to the analysis of electric circuit diagrams; 3) comparison of various methods for the analysis of electric circuit diagrams. The author presents a method of setting up equations for multipole circuit diagrams. However, he does not give even one example that might confirm the usefulness of his method. It is shown here that the well-known method of equivalent-circuit diagrams should be preferred. The book is intended especially for persons dealing with the theory of electric circuits. Some parts are difficult to read because the author employs rarely used terms and expressions without explanation. There are 3 references, 2 of which are Soviet.

Card 1/1

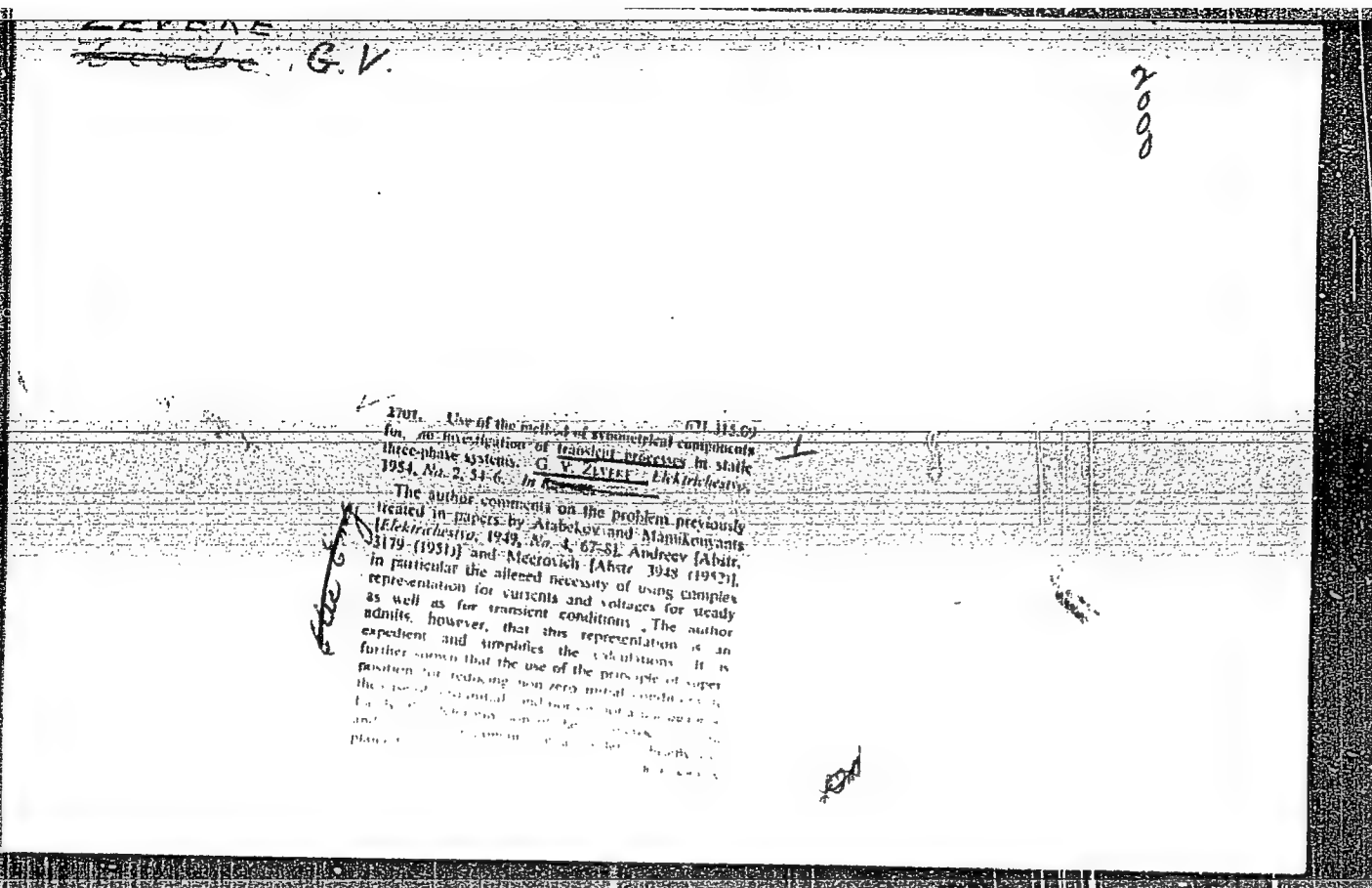
USCOMM-DC-61,908

ZEVEKE, G.V., dotsent, kand.tekhn.nauk

Equivalent circuits of an autotransformer. Trudy MEI no.27:
34-37 '58. (MIRA 13:4)
(Electric transformers)

ZEVEKE, Georgiy Vasil'yevich, prof.; IONKIN, Petr Afanas'yevich, prof.; NETUSHIL, Anatoliy Vladimirovich, prof.; STRAKHOV, Sergey Vladimirovich, prof.; ZHUKHOVITSKIY, B.Ya., dots., red.

[Fundamentals of network theory] Osnovy teorii tsepei. [By] G.V.Zeveke 1 dr. Izd.3., ispr. Moskva, Energiia, 1965.
444 p. (MIRA 18:5)



ZEVEKE, Georgiy Vasil'yevich, prof.; IONKIN, Petr Afanas'yevich,
prof.; NETUSHIL, Anatoliy Vladimirovich, prof.;
STRAKHOV, Sergey Vladimirovich, prof.; LAVROV, V.M., dots.,
retsenzent; ZHUKHOVITSKIY, B.Ya., dots., red.; BORUNOV, N.I.,
tekhn. red.

[Principles of the network theory] Osnovy teorii tsepei. [Ey]
G.V.Zeveke i dr. Izd.2., perer. Moskva, Gosenergoizdat, 1963.
440 p.
(MIRA 17:1)

8(3)

AUTHOR:

Zeveke, Georgiy Vasil'yevich, Candidate SOV/161-58-2-1/30
of Technical Sciences, Docent at the Chair of Theoretical
Principles of Electrical Engineering of the Moscow Power
Engineering Institute

TITLE:

2n - Poles (2n - polyusniki)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Elektromekhanika i
avtomatika, 1958, Nr 2, pp 3 - 13 (USSR)

ABSTRACT:

According to the most complete classification of multipoles as given by E. V. Zelyakh (Ref 1) a 2n - pole is described as being a multipole having n pairs of poles, the sum of the current intensities in each pair being zero. A multipole can be regarded as a 2n - pole, in two cases: (1) when the characteristics of the outer (with respect to the multipole) circuit diagram ensure the sum of the current intensities to equal zero, in each pair, and (2) when this is caused by the properties of a multipole independent of the character of the outer (with respect to the multipole) circuit diagram. The first case is simpler. The second case only occurs with remarkable properties of the multipole. This case is dealt

Card 1/2

2n - Poles

SOV/161-58-2-1/30

with here. The conditions the parameters of the multipole have to satisfy if it is a 2n - pole are ascertained. Various equivalent diagrams are investigated. All investigations are carried out with respect to a multipole with three pairs of poles. The results obtained may be extended to multipoles with any number of pairs of poles. There are 5 figures and 5 references, 2 of which are Soviet.

ASSOCIATION: Kafedra teoreticheskikh osnov elektrotekhniki Moskovskogo energeticheskogo instituta (Chair of Theoretical Principles of Electrical Engineering of the Moscow Power Engineering Institute)

SUBMITTED: January 7, 1958

Card 2/2

ZEVEKE, Georgiy Vasil'yevich, dots., kand. tekhn. nauk.

2n-terminal networks. Nauch. dokl. vys. shkoly; elektromekh. i avtom.
no.2:3-13 '58. (MIRA 12:1)

1.Kafedra teoreticheskikh osnov elektrotekhniki Moskovskogo
energeticheskogo instituta.
(Electric networks)

ZEVEKE, Georgiy Vasil'yevich; IONKIN, Petr Afanas'yevich; ZHUKHOVITSKIY
B.Ya, redaktor; FRIDKIN, A.M., tekhnicheskii redaktor

[Principles of electrical engineering] Osnovy elektrotekhniki,
Moskva, Gos. energ. izd-vo, 1955. Part 1. [Principles of the
circuit theory] Osnovy teorii tsapai. 1955. 215 p. (MLRA 8:8)
(Electric circuits)

Zeveke, G.V.

AID P - 2355

Subject : USSR/Electricity

Card 1/2 Pub. 27 - 19/30

Authors : Zeveke, G. V., Kand. of Tech. Sci., Dotsent
 Ionkin, P. A., Kand. of Tech. Sci., Dotsent
 Netushil, A. V., Doc. of Tech. Sci., Prof.
 Strakhov, S. V., Kand. of Tech. Sci., Dotsent, Moscow
 Power Engineering Institute im Molotov; Darevskiy, A.I.,
 Kand. of Tech. Sci., Dotsent, All-Union Correspondence
 Polytechnical Institute; Lomonosov, V. Yu., Doc. of Tech.
 Sci., Prof. Central Scientific Research Institute of the
 Ministry of Electric Power Stations; Neyman, L. R., Prof.
 Corr. Mem. of Academy of Sciences, USSR Leningrad Poly-
 technical Institute im. Kalinin

Title : Concerning a textbook on the theory of electrical engi-
 neering for a university course (Discussion) (Same
 Journal, Nos. 6, 7, 12, 1953; Nos. 3, 4, 1954)

Periodical : Elektrichestvo, 5, 69-73, My 1955

Abstract : The discussion concerned the coordination of the course
 in the theoretical bases of electrical engineering with

ZEVEKE, Georgiy Vasil'yevich, kand. tekhn. nauk, dotsent

Simple method for calculating transient and steady-state processes in a linear circuit subject to the action of a sequence of repeating voltage impulses. Izv. vys. ucheb. zav.; elektromekh. 6 no.10:1245-1248 '63. (MIRA 17:1)

1. Moskovskiy energeticheskiy institut.

LOKSHIN, A.M., inzh.; ZEVELEV, N.M., inzh.

A control demodulator for television transmitters. Vest. svyazi
22 no.10:6-7 0 '62. (MIRA 15:11)
(Television--Transmitters and transmission)

ZEVELEVA, Z.A., assistant

Cytological examination of the tonsils in children with chronic dysentery. Sbor. trud. Kursk. gos. med. inst. no.13;219-222 '58.

(MIRA 14:3)

1. Iz kliniki bolezney ukha, gorla i nosa (zav. - prof. A.V.Savel' yev) Kurskogo gosudarstvennogo meditsinskogo instituta.
(DYSENTERY) (TONSILS)

ZEVELEVA, Z.A. (Kursk, Zolotarevskaya ul., 13, korpus 4, kv.1)

Glands of mucous membrane of the paranasal sinuses of the nose.
Arkh. anat. gist. i embr. 40 no. 1:41-46 Ja '61. (MIRA 14:2)

1. Kafedra bolezney ukha, gorla i nosa (zaveduyushchiy - prof.
A.V. Savel'yev) i kafedra anatomii cheloveka (zaveduyushchiy -
prof. A.A. Otelnik) Kurskogo meditsinskogo instituta.
(NOSE, ACCESSORY SINUSES OF)

MEL'CHINSKIY, N.A., SUKHORUKOVA, L.N., ZEVELEVA, Z.A., KOROBOVA, F.M., KADISH, F.M.
BERLIZEVA, K.F., ZLOTNIKOV, Ye.M., BLYUMKINA, M.I.,
VOLOSUNOVA, N.P. LARINA, S.P. YEVDOKIMOVA, L.N.

Professor Aleksandr Vasil'evich Savel'ev; on his 60th birthday.
Vest.oto-rin. 20 no.6:126-127 N-D '58 (MIRA 11:12)
(SAVEL'EV, ALEKSANDR VASIL'EVICH, 1898-)

ZEVELEVA Z.A.

USSR/Human and Animal Morphology (Normal and Pathological) Lymph System S-4

Abs Jour : Ref Zhur - Biol., No 12, 1958, No 55137

Author : Zeveleva Z.A.

Inst : Kursk Institute of Medicine

Title : On the Problem of Age-Determined Changes of the Palatine Tonsils.

Orig Pub : Sb. tr. Kurskiy med. in-t, 1956, vyp. 11, 108-111

Abstract : The age-determined characteristics in the development of the palatine tonsils are to be found in the differentiation of the lymphoid tissue, the appearance and the deepening of the tonsillar crypt, and the approximation of the tonsillar substance to the epithelial cover. The largest number of nervous fibers, as well as of nerve tracts and receptors have been found in the tonsils of 6-7 years old children.

Card : 1/1

ZEVEREV, N. I., Engineer--

"Louver-Type Ash Trap." Sub 2 Jul 47, All-Union Order of the Labor
Red Banner Sci Res Heat Engineering Inst imeni F. E. Dzerzhinskiy

Dissertations presented for degrees in science and engineering in
Moscow in 1947.

SO: Sum.No. 457, 18 Apr 55

ZEVIN, A.

Speedboats. Voen. znan. 25 no.5:14-15 My '49. (MIRA 12:12)
(Motorboats)

S/124/62/000/001/045/046
D237/D304

AUTHOR: Zevin, A. D.

TITLE: Investigating general deformations of the
elements of welded constructions along
longitudinal seams

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 1, 1962,
53-54, abstract 1V469 (Sb. nauchn. tr. Kafedry
metal. i derev. konstruktsiy. Dnepropetr.
inzh.-stroit. in-t, 1960, no. 14, 3-17)

TEXT: A development is given of an approximate method of
calculating general weld deformations of articles with longitudi-
nal seams with initial deformations caused by the setting of the
former seams. Experimental results are given of determination
of longitudinal deformations of elements with cross, H, and
other profiles. Comparison of experimental and calculated data
with and without change of the moment of inertia of the cross-

Card 1/2

Investigating general...

S/124/62/000/001/045/046
D237/D304

section is given. Consequently, the limit is given for the applicability of the computational formula proposed by N. O. Okerblom. It is shown that the proposed computational improvements result in closer agreement of calculated and measured values. [Abstracter's note: Complete translation.] ✓

Card 2/2

ZEVIN, A. D., Cand Tech Sci --"Study of general deformations
~~of the~~ elements of welded ^{structures because of} ~~constructions due to~~ longitudinal
seams." Mos, 1961. (Min of Higher and Sec Spec Ed RSFSR.
Mos Order of Labor Red Banner Eng-^{Const} ~~Build~~ Inst im V. V. Kuy-
byshev) (KL, 8-61, 243)

- 230 -

USSR/Engineering - Columns,
Welding

May 51

"Deformations of the Constructions of High
Buildings Due to Welding," A. D. Zevin,
Eng.

"AvtoGen Delo" No 5, pp 3-6

Exptl investigations were conducted at
Metal Constructions Plant Imeni Molotov for
developing measures to decrease the effect
of welding deformations on deviation of
structural members from their design di-
mensions. Two types of columns were studied:

200T27

USSR/Engineering - Columns,
Welding (Contd) May 51

I-section and columns of section in the
shape of a cross. Latter were used for
the 1st time in building practice, and
special investigation was conducted to re-
veal most efficient sequence of executing
the welding joints. Conclusions are given.

200T27

ZEVIN, A.D.

ZEVIN, A.; KONOPIEV, M.; YURCHUK, S.; FEDOROV, A.A., redaktor; USPENSKIY, N.M., redaktor; ANDRIANOV, B.I., tekhnicheskiy redaktor

[Training the sharpshooter to meet the standards of the "Ready for Labor and Defense" organization] Podgotovka strelka po normativam GTO. Moskva, Izd-vo DOSAAF, 1956. 179 p. (MLRA 9:12)

ZEVIN, A.

Seven marksmen from the All-Union Volunteer Society for
Assistance to the Army won the championship. Voen.znan. 25
no.9:19 S '49. (MIRA 12:12)
(Target practice)

ZEVIN, A.

A team of marksmen; based on the experience of organizations of the All-Union Voluntary Society for the Promotion of the Army Moskva, Dosarm, 1950. 55 p. (51-23512)

GV1153.24

BTR

3962* Deformation During Welding of Structures of High Buildings. (In Russian.) A. D. Zevin. *Actogennoe Delo*, v. 22, May 1951, p. 3-6. Experiments were made with aim of reducing the influence of deformation during welding on the building structures. Results are discussed, charted, and illustrated.

Mil. Rev
1982

229-K. Deformation During Welding
of Structures of High Buildings. (In
Russian.) A. D. Zeyin. *Avtogennoe*
Delo, v. 22, May 1961, p. 3-4.
Experiments were made with aim
of reducing the influence of defor-
mation during welding on the build-
ing structures. (K general, T26, CN)

ACCESSION NR: AT4019303

S/0000/63/003/001/0137/0140

AUTHOR: Kitaygorodskiy, I. I.; Zevin, L. S.; Artamonova, M. V.

TITLE: Investigation of the phase composition of glassy-crystalline materials based on the systems lithium oxide-alumina-silica and lithium oxide-magnesium oxide-alumina-silica

SOURCE: Simpozium po stekloobraznomu sostoyaniyu. Leningrad, 1962. Stekloobraznoye sostoyaniye, vy*p. 1: Katalizirovannaya kristallizatsiya stekla (Vitreous state, no. 1: Catalyzing crystallization of glass). Trudy* simpoziuma, v. 3, no. 1. Moscow, Izd-vo AN SSSR, 1963, 137-140, top half of insert facing p. 162

TOPIC TAGS: glass, glassy-crystalline material, eucryptite, spodumene, petalite, x-ray diffraction, lithium aluminosilicate

ABSTRACT: Roentgenographic studies were carried out to follow the changes in the phase composition of glassy-crystalline materials of the systems $\text{Li}_2\text{O}-\text{Al}_2\text{O}_3-\text{SiO}_2$ and $\text{Li}_2\text{O}-\text{MgO}-\text{Al}_2\text{O}_3-\text{SiO}_2$ with different molecular ratios of the oxides during thermal treatment. The ternary system includes three minerals found in nature: eucryptite (molecular ratio of oxides 1:1:2), spodumene (1:1:4) and petalite (1:1:8). It is suggested that the structural

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Card

ACCESSION NR: AT4019303

changes observed are connected with one of the following phenomena: The formation of a "second phase" (the composition of which cannot be determined by the x-ray data obtained for compounds of this system) or the modified transformation of β -spodumene from the low-temperature form, stable in a temperature range of 700-800C to a high-temperature form, stable at temperatures higher than 900C. The formation of a second phase was observed in all cases with oxide ratios between 1:1:4 and 1:1:10. If the line of the "second phase" was eliminated, the x-ray diagrams of the compounds with oxide ratios from 1:1:2 to 1:1:10 were very similar and differed only by a shift of the lines toward greater values of Θ during the transition from the compound 1:1:2 to the compound 1:1:10. This effect is probably connected with the formation of a wide range of solid solutions, including β -eucryptite, β -spodumene and petalite. However, both hypotheses can be verified only by the preparation of monocrystals of β -spodumene. Orig. art. has: 3 figures.

ASSOCIATION: Katedra tekhnologii stekla MKhTI im. D. I. Mendeleeva (Department of Glass Technology, MKhTI)

SUBMITTED: 17May63

DATE ACQ: 21Nov63

ENCL: 00

SUB CODE: MT

NO REF SOV: 000

OTHER: 000

Card 2/2

ZEVIN, L.S.; UMANSKIY, M.M.

Technique of allowing for vertical divergence in diffractometric measurements of the parameter of an elementary cell.
Kristallografiia 9 no.3:399-402 My-Je '64. (MIRA 17:6)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova
i Nauchno-issledovatel'skiy institut asbesta, slyudy, asbesto-
tsementnykh izdeliy i proyektirovaniya stroitel'stva predpriyatiy
slyudyanoy promyshlennosti.

ZEVIN, L. S.; UMANSKIY, M. M.; KHEYKER, D. M.

"The determination of optimal conditions of diffractometer registration of polycrystals in connection with geometrical aberrations."

report submitted for 6th Gen Assembly, Intl Union of Crystallography, Rome, 9 Sep 63.

Asbestos Cement Res Inst, Physics Dept, Moscow State Univ.

AUTHORS: Umanskiy, M.M., Kheyker, D.M. SOV/70-4-3-14/32 and Zevin, L.S.

TITLE: Precision Measurement of Unit Cell Parameters With a Diffractometer

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 3, pp 372-381 (USSR)

ABSTRACT: It is recommended that the positions of diffraction peaks should be measured from the positions of their centres of gravity. A method of finding such positions with a diffractometer is described. Here, wavelengths, not of the emission intensity maxima but of the centres of gravity of the spectral lines must be used. The corrections for the Lorentz, polarisation and angular dispersion factors are examined. A focusing monochromator was fitted to the URS-50I diffractometer which enabled it to record up to $2\theta = 168^\circ$ and had an inappreciable vertical divergence. As an example, the parameter of the unit cell of tungsten was found, using $\text{CuK}\beta$ radiation with this technique. At 25°C it was found to be $a = 3.16526 \pm 0.00005 \text{ \AA}$ (including the refraction correction). This was for a wavelength of $\text{CuK}\beta$ of 1.39223 \AA for its centre of gravity. The following

Card1/3

SOV/70-4-5-14/32

Precision Measurement of Unit Cell Parameters With a Diffractometer

sources of error have been minimised by calculation and experiment: 1) departure of the plane of the specimen from the surface giving point focusing; 2) penetration of the X-rays into the specimen; 3) displacement of the reflecting plane from the goniometer axis; 4) vertical divergence of primary and reflected beams; 5) errors in the zero setting of the counter position; 6) electrical errors connected with the integrating circuit and recorder inertia. Various adjusting jigs for setting the specimen and finding the zero position to $\pm 0.2^\circ$ are described. Calculated curves of a) measurement time against distance from the line centre of gravity; b) magnitude of relative error in intensity measurement against distance from line centre of gravity; c) magnitude of relative error in intensity measurement against intensity are given calculated for the geometrical parameters used. Read at the 6th All-Union Conference on the Application of X-rays to the Study of Materials, June 6, 1958.

Card 2/3

Precision Measurement of Unit Cell Parameters With a Diffractometer

SOV/70-4-3-14/32

There are 7 figures, 1 table and 12 references, of which
3 are Soviet, 7 English, 1 French and 1 international.

ASSOCIATIONS: Moskovskiy gosudarstvennyy universitet imeni
M.V. Lomonosova (Moscow State University imeni M.V. Lomonosov)
VNII Asbest-tsement

Card 3/3

KHEYKER, D.M.; VOLKOV, O.S.; ZEVIN, L.S.; LUBE, E.L.

Diffractometric equipment for phase analysis. Trudy NIIsbesttsementa
no.16:25-42 '63. (MIRA 16:8)

(X-ray diffraction examination)

ZEVIN, L.S.; KHEYKER, D.M.

Geometric factors of diffractometric studies in carrying out phase
analysis. Trudy NIIAsbesttsementa no.16:3-24 '63. (MIRA 16:8)
(Diffraction)

VOLKOV, O.S.; ZEVIN, L.S.; KEYKER, D.M.

High-temperature attachment to the URS-501 diffractometer for
the study of the dehydration of asbestos cement and its com-
ponent minerals. Trudy NIIsbesttsementa no.11:84-90 '61.
(MIRA 16:9)

ZEVIN, L.S.; KHEYKER, D.M.

Method of high-temperature and low-temperature diffractometric
procedures. Trudy NIIAsbesttsementa no.10:25-31 '59. (MIRA 16:8)
(X rays--Diffraction)

ZEVIN, L.S.; SURMELI, D.D.; KHEYKER, D.M.

Method of determining the paraffin hydrocarbon content in oxidized
petroleum bitumens. Trudy NIIAsbesttsementa no.10:39-44 '59.

(MIRA 16:8)

(Paraffins) (Bitumen)

ZEVIN, L.S.; ZALKIN, A.I.

Method of absorption spectra of calcium hydrosilicates in the infrared.
Trudy NIIAsbesttsementa no.10:45-53 '59. (MIRA 16:8)
(Calcium silicates--Absorption spectra)

ZEVIN, L.S.; UMANSKIY, M.M.; KHEYKER, D.M.

Geometrical aberrations and optimum conditions for X-ray diffraction measurements of polycrystals. Kristallografiia 8 no.4:663-673 J1-Ag '63. (MIRA 16:9)

1. Nauchno-issledovatel'skiy institut asbesta, slyudy, asbestotsementnykh izdeliy i proyektirovaniya stroitel'stva predpriyatiy slyudyaney promyshlennosti i Moskovskiy gosudarstvennyy universitet imeni Lomonsova.

(X-ray crystallography)

ZEVIN, L.S.; KHEYKER, D.M.

Methods of producing images of plane coarse-grained samples in the diffractometer. Zav.lab. 29 no.2:184-189 '63. (MIRA 16:5)

1. Nauchno-issledovatel'skiy institut asbesta, slyudy, asbestotsemnnykh izdeliy i proyektirovaniya stroitel'stva predpriyatiy slyudyanoy promyshlennosti.

(X rays--Diffraction)

L 10863-66 *a* EWP(e)/EWT(m)/T/EWP(j)/EWP(b)/ETC(m) NW/RM/WH
 ACC NR: AP5028733 SOURCE CODE: UR/0367/65/001/011/2009/2013
 AUTHOR: Bogdanova, G. S.; Orlova, Ye. M.; Zevin, L. S. *36 B*
 ORG: State Scientific Research Institute of Glass (Gosudarstvennyy nauchno-issledovatel'skiy institut stekla)
 TITLE: Phase composition of pyroceramics in the system $\text{SiO}_2\text{-Al}_2\text{O}_3\text{-BaO-TiO}_2$ *16114*
 SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 11, 1965, 2009-2013
 TOPIC TAGS: titanium dioxide, catalyzed crystallization, glass
 ABSTRACT: The phase composition of celsian base pyroceramics was studied at various stages of the crystallization process. Titanium dioxide was used as the crystallization catalyst. X-ray diffraction patterns were obtained with a URS-5012 diffractometer. In those glasses whose main composition was in the celsian range in the phase diagram of the $\text{SiO}_2\text{-Al}_2\text{O}_3\text{-BaO}$ system the main end product of crystallization was β -celsian, independent of the initial stage of crystallization. At this stage either the α or the β modification of celsian separated out. After β -celsian has crystallized out completely above 1050°C , the composition of the residual glass phase is in the

Card 1/2 UDC: 546.284+546.623+546.431+546.824

L 10853-66

ACC NR: AP5028733

aluminum Al TiO range. The presence of aluminum titanate in the composition is indicated by a marked increase in the dielectric constant and by x-ray phase analysis. Orig. art. has: 2 figures, 1 table.

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HW
Card 2/2

KHEYKER, Daniel' Moiseyevich; ZEVIN, Lev Saulovich; ZHDANOV, G.S.,
prof., red.; DUBNOVA, V.Ya., red.; FLAKSHE, L.Yu., tekhn.red.

[X-ray diffractometry] Rentgenovskaya diffraktsiya. Pod
red. G.S.Zhdanova. Moskva, Fizmatgiz, 1963. 380 p.
(X rays--Diffraction) (MIRA 16:5)